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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,202	11/20/2003	Ryosaku Inamura	0941.6875I	9823
7590 12/17/2008				
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EXAMINER				
MILLER, BRIAN E				
ART UNIT		PAPER NUMBER		
2627				
MAIL DATE		DELIVERY MODE		
12/17/2008		PAPER		

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RECORD OF ORAL HEARING

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RYOSAKU INAMURA, KAZUMASA SHIMODA,
TOSHIO SUGIMOTO, and TAKUYA UZUMAKI

Appeal 2008-3640
Application 10/718,202
Technology Center 2600

Oral Hearing Held: November 18, 2008

Before JOSEPH F. RUGGIERO, ROBERT E. NAPPI, and CARLA M. KRIVAK, Administrative Patent Judges

ON BEHALF OF THE APPELLANTS:

JAMES FOLKER, ESQ.
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The above-entitled matter came on for hearing on Tuesday, November 18, 2008, commencing at 9:00 a.m., at The U.S. Patent and Trademark Office, 600 Dulany Street, Alexandria, Virginia, before Laura P. Platt.

1 THE CLERK: Calendar Number 35, Appeal Number 2008-3640, Mr.
2 Folker.

3 JUDGE RUGGIERO: Good morning.

4 MR. FOLKER: Good morning. First I'd like to explain a few details
5 of the invention that may not really --

6 JUDGE RUGGIERO: Before you start, do you want to spell your
7 name?

8 MR. FOLKER: Yes, sorry. James Folker, F-O-L-K-E-R.

9 First I'd like to explain some details of the invention that may not have
10 jumped out at you in the briefs, and then I will discuss the rejection. Of
11 course, there's only a single rejection. And I will try to answer any questions
12 that you have.

13 We don't have a board in here, do we?

14 JUDGE NAPPI: There's a white board.

15 MR. FOLKER: Okay. Very good.

16 This invention is related to a perpendicular magnetic recording. It's
17 got a magnetic layer, and the magnetism in the magnetic layer is
18 perpendicular to the surface. So it's up and down.

19 It's got a second layer, a backing layer, which has magnetism in the --
20 in plane direction, perpendicular to the other, to the magnetic recording
21 layer.

22 And the purpose of this secondary layer is to -- the purpose of the
23 secondary layer is to aid in the writing process of this magnetic layer. But it
24 strengthens -- it helps to strengthen this magnetization. But there's a
25 problem when they're reading these in this type of device. It is this extra
26 magnetism in the bottom causes noise.

1 So the purpose of this invention was to keep the benefit of this
2 secondary layer, this lower layer which helps in the writing process, but to
3 eliminate the noise in the reading process.

4 So how they did that is they chose a layer, a material for this
5 secondary layer, this backing layer that had a specific compensation
6 temperature. The compensation temperature is -- I'll pull the drawings.

7 The compensation temperature, if you'll turn to figure 2 in our
8 application, if you have that handy. I could actually draw it up here also.
9 It's easy enough, which figure 2 is a graph of the magnetization and the
10 temperature. Our figure 2 also has a course and recourse, but we don't need
11 to talk about that right now.

12 In this material at the compensation temperature, which is down here,
13 the magnetization is zero or near zero.

14 So what they've done for our invention is in this backing layer, they've
15 chosen the material -- they've set the compensation temperature for this
16 material, because I believe it can be adjusted by the choice of material and
17 the crystallization, by changing different parameters.

18 They've set the compensation temperature for the backing material so
19 that it is effectively zero. So the magnetization is effectively zero at the --
20 let me make sure I don't mix it up -- at the reading, when you're reading the
21 magnetization.

22 So by doing that, by setting the compensation temperature at that
23 point, when you are reading, it doesn't cause the problems of noise. But
24 when they're writing, they still get the benefit of the secondary magnetic
25 layer.

26 So that compensation temperature is basically set to be close to what

1 the environment that this medium will be in within the disk drive.

2 So during the normal reading operation, this secondary layer is at the
3 compensation temperature, so it's really playing a very minimal -- the
4 magnetization of it is playing almost no role, so it doesn't cause the problems
5 of the noise.

6 JUDGE RUGGIERO: But when you are writing, you have to get
7 away from the compensation temperature?

8 MR. FOLKER: Yes, when you are writing, you are away from the
9 compensation temperature. We do that by either heating or cooling the disk,
10 which isn't in our claims right now because these claims are directed to the
11 medium itself.

12 We do have other claims that were allowed, and we separated those to
13 a divisional application. I'm not sure where the prosecution on that is.
14 They're allowed in the parent application. Anyway, we have apparatus
15 claims to the whole disk drive which does include the means for heating or
16 cooling, but it was tough to put that into the medium claims.

17 Actually, in figures 3A and 3B, you could just see the -- of our
18 application, Figure 3A is the recording or writing process where the backing
19 layer is magnetized. The magnetization is effective because we apply heat
20 or cool to get away from that compensation temperature.

21 Figure 3B shows where there's no heating or cooling and the
22 magnetization of this secondary layer has dropped out.

23 So there's only one rejection in this case, and it's a 103 rejection. It's a
24 combination of an Akiyama patent with a Japanese patent number 2-227814.
25 I think I'll refer to it as JP-814.

26 The Akiyama patent, prior art 1, is also a two layer. The relevant

1 layers are two layers. There's a perpendicular magnetic recording layer to
2 go either way, up or down, perpendicular to the surface. And there's a
3 backing layer which the magnetization is in plane, same magnetization
4 direction as our invention.

5 But the difference is that the Akiyama reference does not have any
6 discussion of the compensation temperature. They don't discuss heating or
7 cooling to get away from the compensation temperature. They don't
8 mention it at all.

9 So the examiner relied on a secondary reference, JP-814, which is also
10 magnetic recording medium. Magnetic layers are also perpendicular to the
11 surface. But in this one the layer directly below the magnetic layer is
12 perpendicular to the surface as well.

13 This one does talk about the compensation temperature. I believe it
14 talks about it a little more broadly than we are discussing it because it says in
15 the English abstract that the compensation temperature exists in the
16 recording and reproducing range. So it's broader than our invention which
17 the compensation temperature is just in the reproducing range, the reading
18 range.

19 So our argument is basically twofold. Our first portion of the
20 argument is that one ordinarily skilled in the art wouldn't have taken --
21 wouldn't have looked to this secondary layer of JP-814 to modify the first
22 priority, the Akiyama reference, because it's in a different -- the
23 magnetization is in a different direction.

24 I think the direction of the magnetization is important because of the
25 interaction here between the two layers. So the Akiyama talks about the
26 benefits of this type of interaction, and JP-814 talks about the benefits of this

1 type of interaction.

2 I think our secondary argument, which is also outlined in the brief, is
3 that even if somebody was going to consider this backing layer of JP-814
4 and modify the Akiyama reference based on that, they would have taken the
5 entire structure of it.

6 They would have taken the material. They would have also taken the
7 magnetization direction, because both of those are important features to get
8 the benefits of what JP-814 teaches.

9 So the argument is that if you just choose the materials and the
10 compensation temperature without also taking the magnetization direction,
11 you are choosing impermissible hindsight to come back to arrive at our
12 invention because you're just picking and choosing certain features but not
13 the entire structure of the secondary reference.

14 You take that layer basically as a whole with the structure as it is with
15 the materials and the compensation temperature.

16 JUDGE RUGGIERO: Do you actually have an English translation of
17 the --

18 MR. FOLKER: I wish I did. I do not currently.

19 JUDGE RUGGIERO: They look like, just going back to the early
20 prosecutions, it looked like arguments coming from your side, it looked like
21 they were referring to some kind of English translation.

22 MR. FOLKER: Our clients are Japanese, and they translated a few
23 paragraphs of it and sent that to us. We didn't put those translations in the
24 brief. They were in the prosecution.

25 JUDGE RUGGIERO: You don't have them.

26 MR. FOLKER: I don't have a full translation.

1 JUDGE RUGGIERO: We don't have one.

2 MR. FOLKER: It's not in the record.

3 JUDGE RUGGIERO: We are trying to get one.

4 MR. FOLKER: Okay. We could get one from the client, given some
5 time. We just don't have one now. I understand they're relatively expensive
6 to get.

7 JUDGE RUGGIERO: So basically your position is that the reason
8 that JP-814, which is the high density recording, is because of the
9 magnetization direction?

10 MR. FOLKER: Yes. From what I could tell, the teaching is related to
11 the magnetization direction as well as the compensation temperatures. And
12 this first prior art is similar. They teach the benefits of magnetization
13 directions. They don't teach the compensation temperature.

14 In this first prior art, the Akiyama reference, they did discuss this kind
15 of relationship of JP-814, two layers, both perpendicular magnetization. It
16 says that in the background.

17 They specifically changed that to be like this to get away from noise.
18 I think there's some noise that these -- I don't understand fully -- but there's a
19 shifting, I believe, in the magnetic bits a little bit, and that causes problems
20 at the shift, at the discontinuity.

21 I'll check my notes, but I believe that's it, and I'm open for questions.

22 JUDGE RUGGIERO: Any questions?

23 We don't have any questions.

24 MR. FOLKER: Okay. Just one more minute. No, I have nothing
25 further.

26 (Whereupon, the proceedings at 9:46 a.m. were concluded.)